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Montana  
Agricultural  
Experiment  
Station

Bozeman,  
Montana

# MONTANA WATER SUPPLY OUTLOOK

Snowpack and Streamflow  
Forecasts as of  
January 1, 1982

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

P.O. Box 98  
Bozeman, Montana 59715

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## STATEWIDE OUTLOOK

### STREAMFLOW FORECASTS

Most drainages are forecast to have near average or a little below average runoff for the April through September 1982 period, assuming precipitation for the next six months is near normal. Forecasts for smaller streams will be issued next month after snowfall patterns become more definite.

### MOUNTAIN SNOWPACK

Much of the state has near average mountain snowpack. Generally, the southwestern areas have better snow cover than northern and eastern drainages.

The snowpack is above average along the Continental Divide from Yellowstone National Park to Lost Trail Pass and in the Bitterroot Range. The southern areas of Yellowstone Park are much above average. There are some areas that show below average snowpack. These are in the smaller mountain ranges in central Montana and most of the Kootenai, Flathead, Lower Clark Fork, and Blackfoot River drainages.

### WEATHER OUTLOOK FOR JANUARY 1982

The National Weather Service is expecting temperatures to be near normal over most of the state. A small area in southwest Montana is projected to have above average temperatures.

Precipitation over the western half of Montana is shown in the above average range while the eastern half is in the below average area.

By January 1, about 40 percent of the season's snowpack is accumulated on the mountain watersheds. With much of the snowfall season remaining, it may be another month or two before this season's snowfall pattern can be accurately determined. For this time of year, conditions appear to be more favorable than for the past two seasons.

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THE MONTANA WATER SUPPLY OUTLOOK IS A PUBLICATION OF THE U.S. SOIL CONSERVATION SERVICE. THE SCS ADMINISTERS THE COOPERATIVE SNOW SURVEY PROGRAM IN COOPERATION WITH OTHER FEDERAL, STATE, AND PRIVATE AGENCIES, ORGANIZATIONS, AND INDIVIDUALS.

THE REPORT IS PREPARED BY SCS, SNOW SURVEY AND WATER SUPPLY FORECAST UNIT, P. O. Box 98, BOZEMAN, MONTANA.

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### MAP OF SNOW SURVEY SITES

A map of Montana Snow Survey Sites is included in this Water Supply Outlook Report. Please keep this copy because future issues this season will not include a map.

A few extra copies are available from the Snow Survey office. Maps showing only SNOTEL sites are also available. If needed, additional copies may be requested.

### SNOWFALL pH - WINTER 1980-1981

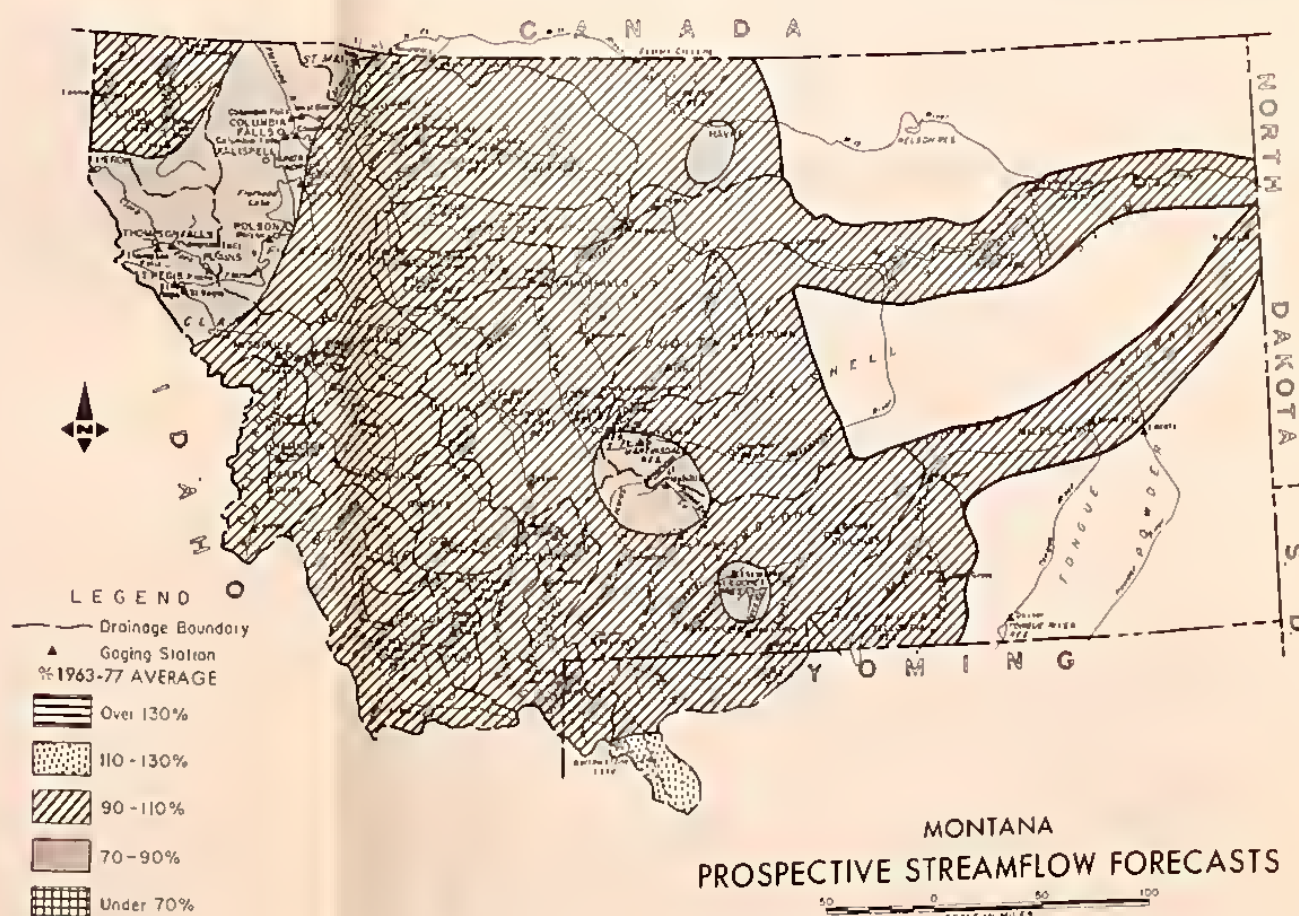
In conjunction with regular snow surveys, employees from the SCS and cooperating agencies took 436 individual pH readings in Montana last winter.

Analysis indicates snowfall in southwestern Montana has lower pH than in other areas. Lowest pH levels, between 4.0 and 5.0, were consistently observed in the Big Hole and Bitterroot River headwaters and in portions of the Upper and Lower Clark Fork, Beaverhead and Madison River drainages. Other watersheds to the north and east had pH levels that were generally in the 5.0 to 6.0 range.

A pH of 5.6 is considered "normal" for precipitation. Values less than 5.0 are generally considered "acid precipitation." A pH of 4.0 is ten times more acidic than a pH of 5.0.

Measurements will be continued this winter. Data from both years will be analyzed to determine any relationships between storm tracks and pH levels, which may help determine possible source areas.

A printed report entitled "Montana Snowfall pH Study, Winter 1980-81", is available from SCS Snow Survey Unit, P. O. Box 98, Bozeman, MT 59715-0092.







# Missouri River & Hudson Bay Drainages

## STREAMFLOW FORECASTS

BASIN, STREAM and FORECAST POINT	THIS YEAR				PAST RECORD			
	FORECAST		THOUSAND ACRES FEET		FORECAST		THOUSAND ACRES FEET	
	THOUSAND ACRES FEET	PERCENT OF AVERAGE	LAST YEAR	AVERAGE	THOUSAND ACRES FEET	PERCENT OF AVERAGE	LAST YEAR	AVERAGE
	APRIL - SEPTEMBER				APRIL - JULY			
BIG HOLE RIVER near Melrose	730	92	792	680	93	730	706	
MADISON RIVER near McAllister (4)	800	90	716	692	645	91	602	706
GALLATIN RIVER near Gateway	516	90		572	440	90	488	
MISSOURI RIVER at Toston (7)	2450	92	2817	2,671	2145	92	2619	2,330
SUN RIVER at Gibson Dam (8)	525	91	498	580	480	91	457	529
MISSOURI RIVER at Fort Benton (9)	3819	92		4,148	3350	92	3,640	
MARIAS RIVER near Shelby	530	92	432	577	490	92	408	532
MISSOURI RIVER at Virgelle (11)	4313	90		4,793	3800	90	4,238	
MISSOURI RIVER near Landusky (11)	4742	91		5,214	4160	91	4,586	
MISSOURI RIVER below Fort Peck Dam (11)	4436	90		4,929	3900	90	4,381	
INFLOW LAKE SAKAKAWA, MD (11)	12105	90		13,450	11000	90	12,239	

- (1) Adjusted for storage in Lima Reservoir.
- (2) Adjusted for storage in Lima and Clark Canyon Reservoirs.
- (3) Adjusted for storage in Hebgen Lake.
- (4) Adjusted for storage in Hebgen Lake and Ennis Lake.
- (5) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above the Reservoir.
- (6) Adjusted for storage in Middle Creek Reservoir.
- (7) Adjusted for storage in Lima, Hebgen, Ennis & Clark Canyon Reservoirs.

- (8) Adjusted for storage in Gibson Reservoir & diversions.
- (9) Adjusted for storage in Lima, Clark Canyon, Hebgen, Ennis, Gibson, Plabkun, Willow Creek & Canyon Ferry Reservoirs.
- (10) Adjusted for storage in Two Medicine Reservoir & diversions in Two Medicine Canal.
- (11) Adjusted for all upstream reservoirs.
- (12) Flow at Eastern Crossing below St. Mary's Canal.
- (13) Adjusted for storage in Lake Sherburne.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

## SUMMARY OF SNOW MEASUREMENTS

RIVER BASIN SUB-MATERIALS	Number of Contour Averages	THIS YEAR'S SNOW WATER AS PERCENT OF LAST YEAR
Beaverhead	9	130
Ruby	3	179
Big Hole	6	140
Boulder	9	114
Jefferson	27	137
Madison	18	147
Gallatin	14	178
Missouri Headwater West-side Missouri (Toston-Cascade)	8	108
Smith	5	110
Belt-Arrow	3	127
Missouri Main-stem	16	112
Teton & Sun	4	146
Marias	3	100
Marias-Teton-Sun	7	116
Judith	5	110
Musselshell	5	110
Judith-Musselshell	10	110
Milk	7	174
Bear Paws	6	785
Missouri (Total)	92	136

Saskatchewan		
St. Mary's	2	72
Box River in Alberta	---	---

## MOUNTAIN SNOWPACK

Water content of the snowpack is above average in the Bighole, Beaverhead and Madison River headwaters. It is below average along the Continental Divide in the headwaters of the Dearborn, Sun, Teton, Marias, and St. Marys River and in small mountain ranges in central Montana. Most of the Missouri River headwaters area has a near average snowpack. Soil moisture under the snowpack is near normal in the southwestern headwaters and near to below normal in other areas.

## STREAMFLOW FORECASTS

Most streams are expected to produce near average to a little below average runoff during the spring and summer months, assuming precipitation averages near normal for the next six months. Some of the smaller streams in the Bighole and Beaverhead River headwaters could have streamflow above average. Streams draining the smaller mountain ranges in central Montana could have below average streamflows if present precipitation patterns continue. Streamflow forecasts for all stations will be issued after the February 1, 1982 snow survey data is obtained.

# Yellowstone River Drainage

## STREAMFLOW FORECASTS

BASIN, STREAM and FORECAST POINT	THIS YEAR				PAST RECORD			
	FORECAST		THOUSAND ACRES FEET		FORECAST		THOUSAND ACRES FEET	
	THOUSAND ACRES FEET	PERCENT OF AVERAGE	LAST YEAR	AVERAGE	THOUSAND ACRES FEET	PERCENT OF AVERAGE	LAST YEAR	AVERAGE
	APRIL - SEPTEMBER				APRIL - JULY			
YELLOWSTONE RIVER at Corwin Springs	2030	97	1703	1,102	1700	97	1466	1,749
YELLOWSTONE RIVER near Livingston	2350	95		1,471	1950	95		2,048
CLARKS FORK RIVER near Belfry	580	90		664	508	90		564
YELLOWSTONE RIVER at Billings	4200	90	3998	1,682	3565	90	3628	3,979
BIGHORN RIVER near St. Xavier (3)	1841	91	1331	1,034	1690	91	1328	1,861
YELLOWSTONE RIVER at Miles City (4)	6425	90		1,142	5600	90		6,243
YELLOWSTONE RIVER near Sidney (5)	7000	90		1,806	6100	90		6,805

- (1) Adjusted for storage in Mystic Lake.
- (2) Adjusted for storage in Cooney Reservoir.
- (3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake, Pilot Butte and Bighorn Reservoirs.
- (4) Adjusted for storage in Bull Lake, Buffalo Bill, Boysen, Pilot Butte, Bighorn and Targhee River Reservoirs.
- (5) Adjusted for reservoirs shown in (4) and diversions into the Lower Yellowstone Canal.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

## SUMMARY OF SNOW MEASUREMENTS

RIVER BASIN SUB-MATERIALS	Number of Contour Averages	THIS YEAR'S SNOW WATER AS PERCENT OF LAST YEAR
Upper Yellowstone		
ab Livingston	13	166
Shields	4	244
Boulder & Stillwater	---	---
Rock Creek & Clark's Fork	9	133
Yellowstone (ab Bighorn River)	26	161
Bighorn/Wyoming	---	---
Little Bighorn	---	---
Bighorn (Total)	---	---
Tongue	---	---
Powder	---	---
Yellowstone (Total)	26	161

## MOUNTAIN SNOWPACK

The current snowpack is quite variable, ranging from below average in the area between Rock Creek and the Crazy Mountains to well above average in the Yellowstone River headwaters above Yellowstone Lake. Most of the main water-producing areas of the Yellowstone River have average to above average amounts of water stored in the snow. The soil moisture is generally near to a little below average in most drainages.

## STREAMFLOW FORECASTS

Yellowstone Lake inflow is expected to be above average during the spring and summer months. The flows decrease downstream to a little below average where the Yellowstone leaves Montana. Unless there is some improvement in snow conditions in the next few months, below average runoff is expected in some of the smaller drainages. Forecasts for smaller tributaries will be issued after February 1, 1982 snow surveys are completed.

# SNOW SURVEY DATA

SNOW JANUARY 1982

DRAINAGE BASIN and SNOW COURSE	Elevation	THIS YEAR				PAST RECORD			
		Date of Survey	Snow Depth (Inches)	Water Content (Percent)	Water Content (Inches)	Date of Survey	Snow Depth (Inches)	Water Content (Percent)	Water Content (Inches)
		NAME	Location	Water Content (Inches)	Water Content (Inches)	NAME	Location	Water Content (Inches)	Water Content (Inches)
ARCH FALLS	7350	K/29	23	4.4	1.4	5.9			
ASHLEY DIVIDE	4820	K/29	20	5.5					
ASHLEY LAKE	4070	K/29	15	2.4					
BADGER PASS	6900	K/31	32	15.0	15.5	21.2			
BADGER PASS PILLW	6900	K/31	32	11.0	11.1				
BANFIELD MOUNTAIN	5600	K/31	40	9.4	9.8	11.6			
BANFIELD MOUNTAIN PILLW	5600	K/31	40	9.4	9.8	11.6			
BARKER LAKES	8250	K/31	27	6.3					
BARKER LAKES PILLW	8250	K/31	27	6.3					
BASIN CREEK	7180	K/29	23	5.6	4.8				
BASIN CREEK PILLW	7180	K/29	23	5.6	4.8				
BEAGLE SPRINGS PILLW	8850	K/31	30	4.3	1.9				
BEAR MOUNTAIN PILLW (10)	5400	K/31	30	26.7					
BEAR PAW SKI AREA	5270	K/30	5	1.0	0.0	2.6			
BIG SPRINGS (10)	6500	K/31	43	9.4	6.7	7.8			
BLACK BEAR	7950	K/29	70	21.8	13.2	17.3			
BLACK BEAR PILLW	7950	K/29	70	18.7	13.4	16.4			
BLACK PINE	7100	K/30	22	4.6	3.0	5.2			
BLACK PINE PILLW	7100	K/30	22	6.7	4.7	6.4			
BLOODY DICK	7600	K/30	34	8.6					
BLOODY DICK PILLW	7600	K/30	34	7.0	5.1				
BLUE LAKE	5900	K/31	34	8.5	8.0	10.8			
BOULDER MOUNTAIN PILLW	7950	K/31	30	10.3					
BOX CANYON PILLW	6670	K/31	30	3.3	1.6				
BOXELDER CREEK	5100	K/30	8	1.2	0.0	3.8			
BRIDGER BOWL	7250	K/29	46	10.6	4.4	13.1			
BRIDGER BOWL PILLW	7250	K/29	46	10.3	5.6	12.7			
BULL MOUNTAIN	6600	K/31	12	2.2	0.0	2.6			
CALVERT CREEK	6450	K/31	27	5.3					
CALVERT CREEK PILLW	6450	K/31	27	4.8	2.3	6.0			
CAMP CREEK (10)	6580	K/31	19	3.0	3.0	4.8			
CANYON (WY)	7940	K/31	FSI	9.0	3.2	6.5			
CANYON PILLW (WY)	7940	K/31	FSI	9.0	3.2	6.5			
CARROT BASIN	9000	K/29	59	17.2	10.6	16.6			
CARROT BASIN PILLW	9000	K/29	59	15.7	9.8	12.2			
CASHE CREEK	7800	K/21	16	2.2					
CASHE CREEK PILLW	7800	K/21	16	4.1	1.6				
CHESSMAN RESERVOIR	6200	K/30	7	1.2	0.0	1.4			
CLOVER MEADOW PILLW	8600	K/31	SP	8.6	5.3	8.5			
COLE CREEK	7850	K/28	23	5.0	6.7	8.6			
COLE CREEK PILLW	7850	K/28	23	4.9	5.3	8.5			
COMBINATION	5600	K/31	9	2.0	0.0	2.5			
COMBINATION PILLW	5600	K/31	9	2.2	0.4	2.6			
COPPER BOTTOM PILLW	5200	K/31	SP	5.5	4.1	7.4			
COPPER CAMP PILLW	6950	K/31	SP	14.0	12.2	19.6			
COYOTE HILL	4200	K/31	20	4.0	2.6	4.0			
CRYSTAL LAKE PILLW	6100	K/31	SP	5.9	4.5				
DAISY PEAK	7600	K/30	24	4.6	4.3				
DALY CREEK	5780	K/30	26	5.3	3.9	5.2			
DALY CREEK PILLW	5780	K/30	26	5.4	5.0				
DARKHORSE LAKE PILLW	8600	K/31	SP	15.0	9.5				
DEADMAN CREEK	6450	K/30	22	4.2	2.7	5.6			
DEADMAN CREEK PILLW	6450	K/30	22	4.0	2.7	5.2			
DEVILS SLIDE	8100	K/28	40	10.1	5.6	10.5			

SNOW JANUARY 1982

DRAINAGE BASIN and SNOW COURSE	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Percent)	Water Content (Inches)	Water Content (Inches)
NAME					Last Year	Example
MARIAS PASS	5250	K/30	25	6.0	5.9	6.2
MAYHARD CREEK	6210	K/29	26	5.3	2.2	6.4
MAYHARD CREEK PILLW	6210	K/29	26	4.4	2.4	5.3
MONUMENT PEAK PILLW	8800	K/31	SP	11.0	7.7	-
MOOSE CREEK PILLW (10)	6200	K/31	SP	9.5	-	-
MOSQUITO RIDGE PILLW (10)	5200	K/31	SP	12.5	-	-
MOUNTAIN RESERVOIR	6850	K/30	18	2.0	1.0	-
MOUNT LOCKHART	6400	K/31	32	8.0	6.4	9.7
MOUNTAIN PILLW	6400	K/31	SP	8.4	6.7	9.6
NEVADA CREEK PILLW	6480	K/31	SP	4.4	4.2	-
NEWTON MOUNTAIN	5600	K/29	49	12.4	16.2	-
NEZ PERCE CAMP PILLW	5650	K/31	SP	5.0	6.4	-
NOISY BASIN PILLW	6040	K/31	SP	14.0	14.4	12.7
NORRIS BASIN (WY)	7500	K/30	29	6.1	5.3	5.0
NORTH FK. ELK CREEK	6250	K/31	24	5.4	1.8	5.1
NORTH FK. ELK CREEK PILLW	6250	K/31	SP	5.4	2.6	5.3
NORTH FORK JOCKO	6330	K/30	66	12.3	13.8	-
NORTHEAST ENTRANCE	7400	K/30	17	3.4	1.8	3.7
NORTHEAST ENTRANCE PILLW	7400	K/30	SP	3.3	2.7	4.3
OLD FAITHFUL (WY)	7400	K/31	38	6.3	2.3	-
OPHIR PARK	7150	K/31	29	6.6	6.4	8.8
PETERSON MEADOWS	7200	K/28	21	4.0	5.2	4.9
PETERSON MEADOWS PILLW	7200	K/28	SP	4.2	5.4	5.1
PICKFOOT CREEK PILLW	6650	K/31	SP	6.0	2.1	-
PIKE CREEK	5930	K/28	35	8.8	-	-
PIKE CREEK PILLW	5930	K/31	SP	9.2	9.5	-
PIPESTONE PASS	7200	K/31	10	1.2	1.0	2.4
PLACER BASIN PILLW	8830	K/31	SP	6.5	5.2	-
POORHORN CREEK PILLW	5100	K/31	SP	10.8	7.8	12.9
POURCHINE PILLW	6500	K/31	SP	2.5	1.3	-
RED TOP	5260	K/29	40	9.6	12.4	-
ROCKER PEAK	8000	K/29	29	6.2	6.8	7.9
ROCKER PEAK PILLW	8000	K/29	SP	7.1	7.0	7.3
ROCKY ROY	4700	K/30	4	1.0	1.0	1.7
ROCKY BOY PILLW	4700	K/30	SP	2.7	0.7	1.8
SADDLE MOUNTAIN PILLW	7940	K/28	SP	12.6	11.1	12.3
SAVAGE PASS (10)	6170	K/31	44	11.6	9.6	10.2
SHOWER FALLS	8100	K/28	43	11.1	6.1	11.9
SHOWER FALLS PILLW	8100	K/31	SP	11.1	7.3	11.8
SILVER RUN	6630	K/28	2	.3	-	-
SILVER RUN PILLW	6630	K/28	SP	2.7	0.0	-
SKALKAHU SUMMIT	7260	K/30	56	12.6	9.6	-
SKALKAHU SUMMIT PILLW	7260	K/31	SP	13.5	9.4	6.9
SPOTTED BEAR MOUNTAIN	7260	K/30	27	5.3	3.3	4.9
SPUR PARK	8100	K/30	38	9.4	8.7	9.8
SPUR PARK PILLW	8100	K/30	SP	9.3	10.0	10.7
STAHL PEAK	6050	K/36	56	15.4	18.2	23.4
STAHL PEAK PILLW	6050	K/31	SP	13.0	16.1	18.2
STORRI LAKE	7730	K/28	24	4.6	5.2	5.6
STUART MOUNTAIN	7400	K/30	61	15.5	11.4	13.4
SUCKER CREEK	3960	K/30	4	.6	.0	0.3
SYLVAN PASS (WY)	7100	K/28	32	8.0	3.4	5.2
TARGHEE PASS (10)	7000	K/30	29	6.0	3.7	4.2
TAYLOR ROAD	4080	K/30	5	1.0	1.0	1.9
TEN MILE LOWER	6600	K/31	14	2.2	1.7	2.8
TEN MILE MIDDLE	6800	K/31	24	4.6	5.4	4.6
TEN MILE UPPER	8000	K/29	28	5.6	7.0	5.8



# Columbia River Drainage

## STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR				PAST RECORD				THIS YEAR				PAST RECORD			
	FORECAST		PAST RECORD		FORECAST		PAST RECORD		FORECAST		PAST RECORD		FORECAST		PAST RECORD	
	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average	Thousand Acre Feet	Percent of Average
PERIOD	APRIL - SEPTEMBER				APRIL - JULY				APRIL - JUNE				APRIL - JUNE			
KOOTENAI RIVER below Libby Dam (1)	6890	95	6726	7,246	5870	95	5516	6,178								
KOOTENAI RIVER at Leona (1)	8490	96	7941	8,883	7390	96	6601	7,727	5900	96	4573	6,150				
BLACKFOOT RIVER near Bonner	917	90		1,017	830	90		920	715	90		794				
CLARK FORK RIVER above Milltown (6)	749	89		843	660	90		730	545	89		613				
CLARK FORK RIVER above Missoula	1666	90	1530	1,859	1490	90	1359	1,651	1260	90	1148	1,408				
BITTERROOT RIVER near Darby	570	95	445	602	523	95	401	552	454	95	339	480				
BITTERROOT RIVER at Missoula (9)	1470	95		1,543	1350	95		1,416	1150	95		1,211				
CLARK FORK RIVER below Missoula	3136	92		3,405	2840	93		3,069	2410	92		2,618				
CLARK FORK RIVER at St. Regis	4090	90	3586	4,521	3690	90	3240	4,078	3160	90	2797	3,492				
NORTH FORK FLATHEAD RIVER near Columbia Falls	1710	87		1,969	1550	87		1,782	1300	87		1,498				
MIDDLE FORK FLATHEAD RIVER near West Glacier	1680	88	1504	1,911	1540	88	1385	1,750	1290		1134	1,470				
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)	2070	90	1815	2,302	1940	90	1714	2,159	1700	90	1475	1,884				
FLATHEAD RIVER at Columbia Falls (10)	5610	89	5061	6,330	5160	89	4664	5,827	4420	89	3860	4,964				
FLATHEAD RIVER near Polson (11)	6600	89	6097	7,394	6080	89	5622	6,806	5140	89	4600	5,779				
CLARK FORK RIVER near Plains (11)	11000	89	10071	12,340	10000	89	9190	11,222	8460	89	7570	9,507				
CLARK FORK RIVER at Whitehorse Rapids (12)	12000	87		13,781	10900	87		12,519	9250	87		10,633				

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUBWATERSHED	Number of Gauging Stations	THIS YEAR'S SNOW WATER AS PERCENT OF	
		1963-77 Average	1981
East Kootenay/BC	8	61	77
Kootenai/Montana	10	94	78
Kootenai above Bonners Ferry...	18	78	77
Little Bitterroot	--	---	---
N. Fk. Flathead...	6	82	69
M. Fk. Flathead...	4	84	74
S. Fk. Flathead...	4	146	85
Swan	2	105	82
Flathead	13	86	73
Stillwater & Whitefish	1	83	63
Clark Fork above Blackfoot	23	128	87
Blackfoot	15	163	90
Upper Clark Fork above Missoula	38	142	88
Bitterroot	7	164	112
Lower Clark Fork below Missoula	6	141	94
Clark Fork (Total w/o Flathead)...	51	146	94
Pend O'Reille (Clark Fork & Flathead)	64	121	87
Columbia (Pend O'Reille & Kootenai)	69	115	88

## MOUNTAIN SNOWPACK

Except for the southwestern part of the Bitterroot River drainage, all drainages have near a below average snowpack. Recent storms in this area have delayed some of the helicopter snow survey measurements, and present conditions are probably a little better than indicated by measurements made the last week in December 1981. Over half of the snow accumulation season remains, and conditions may change depending on future storm patterns. Mountain soils beneath the snow are a little drier than normal in most headwater areas.

## STREAMFLOW FORECASTS

Streamflows during next spring and summer are expected to be near to a little below average in southern drainages and in the Kootenai River drainage. The Flathead and Lower Clark Fork Rivers are forecast to have runoff that is 10 to 13 percent below average. Forecasts for major drainages will be updated and smaller tributary runoff will be forecast after February 1, 1982. Snow surveys have been completed.

- (1) Adjusted for storage in Lake Koocanusa.
- (2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
- (3) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.
- (4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.
- (5) Sum of North Fork Lower Willow Creek near Hail and South Fork Lower Willow Creek near Hail.
- (6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.
- (7) Adjusted for storage in Painted Rocks Reservoir.
- (8) Adjusted for diversion into Sunset Highline Canal.
- (9) Difference in observed flow Clark Fork above and below Missoula.
- (10) Adjusted for storage in Hungry Horse Reservoir.
- (11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
- (12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

## SATELLITE SNOW COVER

### MISSOURI RIVER BASIN

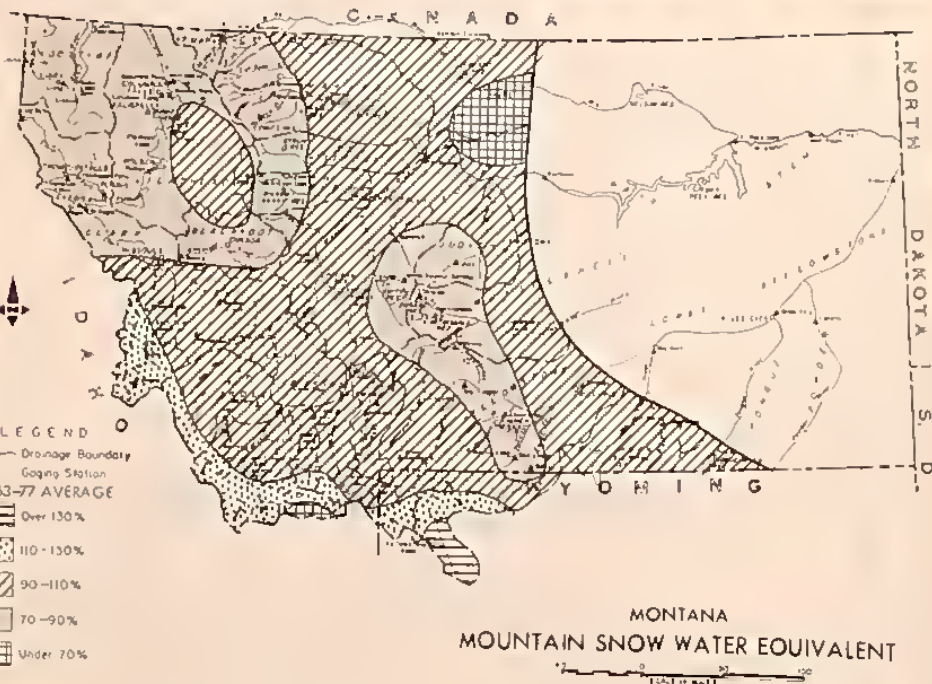
Above Canyon Ferry Dam

DATE	PERCENT SNOW COVER	AVERAGE SNOWLINE ELEVATION IN FEET
November 8, 1981	9.5	8535
November 19, 1981	53	6530
November 26, 1981	100	3800
November 29, 1981	100	3800
December 7, 1981	71	5770
December 17, 1981	100	3800
December 20, 1981	91	4680
December 29, 1981	95	4380

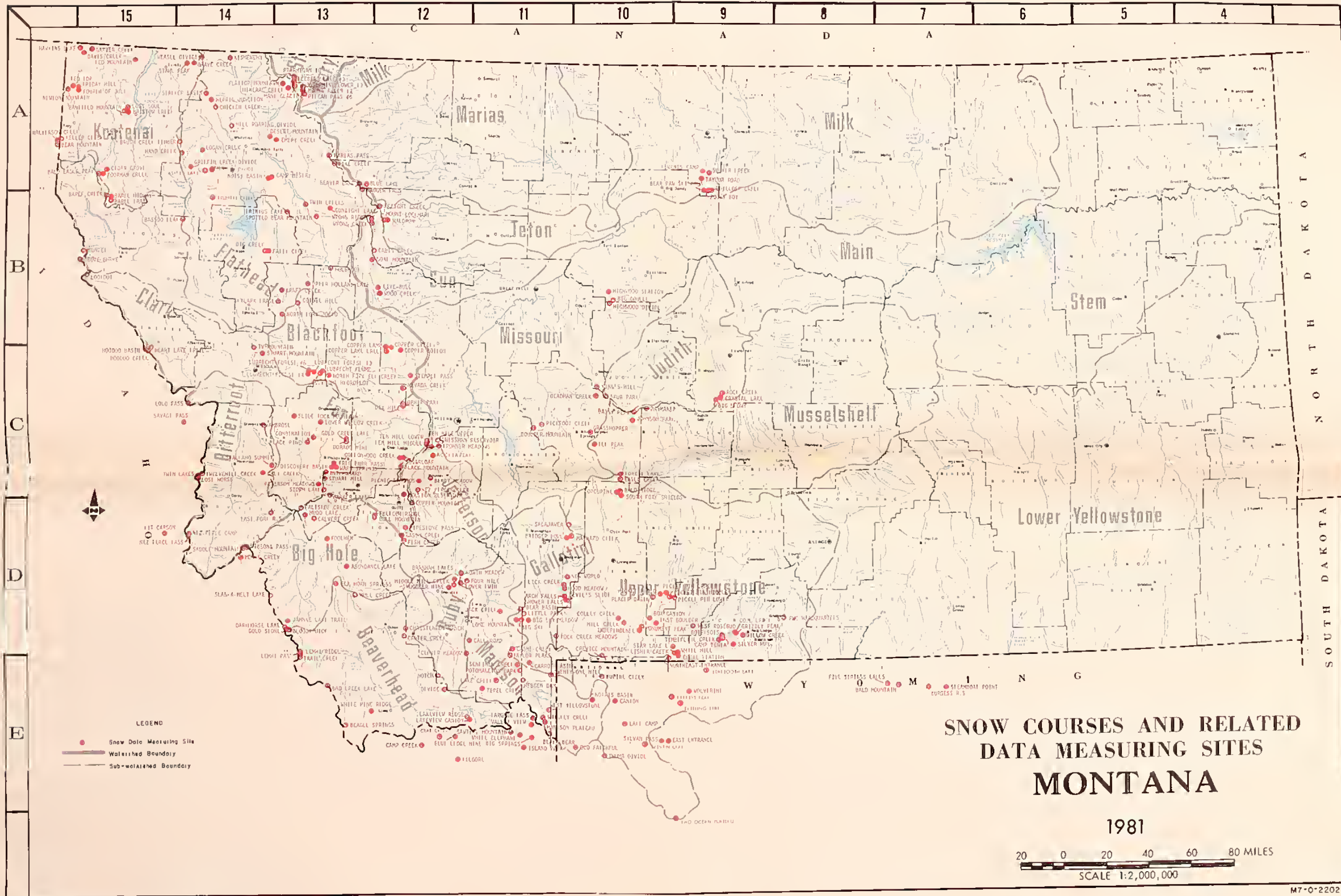
DATA PROVIDED BY NOAA/NESS

## RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Basin or Stream	Reservoir	Usable Capacity	Usable Storage		
			This Year	Last Year	Average
COLUMBIA					
Kootenai	Koocanusa	5,748.2	3,655	3,704	---
Flathead	Hungry Horse	3,451.0	2,603	2,833	2,624
	Flathead Lake	1,791.0	1,171	1,408	1,428
	Camas (4)	45.2	20.0	22.8	19.4
	Mission Valley (8)	100.3	19.6	26.2	34.4
Clark Fork	Georgetown Lake	31.0	29.8	30.0	28.2
	Lower Willow Creek	4.9	.9	1.6	1.4
	Nevada Creek	12.6	4.5	5.8	4.3
	Noxon Rapids	334.6	322.8	308.2	318.7
Bitterroot	Painted Rocks	31.7	---	---	18.3
	Como	34.9	---	---	9.0
MISSOURI					
Beaverhead	Lima	84.0	25.0	44.3	38.8
	Clark Canyon	257.2	155.6	161.1	132.7
Ruby	Ruby	38.8	22.4	---	20.4
Madison	Hebgen Lake	377.5	275.3	274.7	241.5
	Ennis Lake	41.0	30.4	30.0	35.6
Gallatin	Middle Creek	8.0	3.7	3.5	2.9
Missouri	Canyon Ferry	2,043.0	1,747	1,817	1,753
	Hauser & Helena	61.9	63.0	63	61.2
	Lake Helena	10.4	10.9	10.9	10.2
	Holter Lake	81.9	78.1	81.0	76.2
	Fort Peck Lake	18,910.0	14,590	15,380	15,820
Smith	Smith River	10.6	5.7	5.3	6.4
	Newman Creek	12.4	---	9.7	---
Musselshell	Bair	7.0	2.4	4.5	4.2
	Martinsdale	23.1	10.4	10.5	10.0
	Deadman's Basin	72.2	---	---	44.7
Sun	Gibson	99.1	39.3	47.6	38.6
	Willow Creek	32.2	22.4	18.9	20.6
	Pishkun	32.0	19.8	19.6	16.7
Marias	Lower Two Medicine	11.9	---	---	6.1
	Four Horns	19.2	---	---	13.2
	Swift	30.0	5.8	16.2	12.9
	Lake Frances	111.9	78.2	78.6	70.9
Milk	Elwell (Tiber)	1,347.0	514.7	541.2	545.6
	Beaver Creek	3.5	0.7	1.3	1.4
	Fresno	127.2	34.5	36.8	68.2
	Nelson	66.8	58.9	23.7	45.0
HUDSON BAY					
St. Mary's	Lake Sherburne	64.3	12.6	30.3	17.0
YELLOWSTONE					
Stillwater	Nystie Lake	21.0	8.7	8.6	13.1
Clark's Fork	Cooney	27.4	0.0	12.2	14.2
Tongue	Tongue River	68.0	22.2	10.2	30.4
Bighorn	Bighorn Lake	1,356.0	941.5	949.5	580.3







# INDEX TO MONTANA SNOW COURSES AND DATA SITES

Snow Course	Elev.	Sec.	Imp.	Range	Sensors In Addition To Snow Course	Drainage Basin
Abundant Lake	8600	7	35	31W		Big Hole
Adams	6480	28	9N	18W		Billterfoot
Arch Falls	7350	3	55	6E		Gallatin
Ashley Divide	4820	10	28N	23W	P	Flothead
Ashley Lake	4000	8	28N	23W	P	Flothead
Badger Pass	6900	4	27N	11W	A, P, S, I	Trion-Merles-Sun
Bald Eagle Pass	5700	6	27N	11W		Kootenai
Bald Ridge	7500	11	4N	10E		Upper Yellowstone
Banfield Mountain	5600	4	32N	10W	S, P, I, W	Kootenai
Barre Creek	5500	36	26N	31W		Kootenai
Barre Meadow	4600	33	26N	30W		Kootenai
Barre Trail	3800	5	25N	10W		Kootenai
Barter Lakes	8250	17	4N	12W	S, P, I	Clarks Fork
Basin Creek	7180	31	1N	7W	S, P, I	Clarks Fork
Bassoon Peak	5150	11	24N	25W		Flothead
Beagle Springs	8850	6	36S	11W	S, P, I	Beaverhead
Bear Basin	8150	9	6S	3F		Gallatin
Bear Paw Ski Area	5200	21	28N	16E	P	Holbrook
Beaver Lake	5900	31	28N	11W		Flothead
Berry Meadow	7000	8	5N	5W		Jellison
Big Coulee	5100	10	19N	9E		Missouri Main Stem
Big Creek	6750	7	22N	18W		Flothead
Big Sly	3700	30	6S	3E	P	Gallatin
Big Sly Meadow	6350	35	6S	3E		Gallatin
Big Snowy	1150	25	12N	17E		Judith
Black Bear	1950	21	15S	5F	S, P, I	Madison
Black Mountain	7150	14	7N	8W		Clarks Fork
Black Pine	7100	26	8N	15W	S, P, I	Clarks Fork
Bloody Oaks	7600	12	8S	16W	S, P, I	Beaverhead
Blue Lake	5900	25	28N	11W	A	Trion-Merles-Sun
Bois Sois	7750	35	1S	28E		Upper Yellowstone
Boulder Mountain	7950	1	9N	3F	S, P, I	Missouri Main Stem
Box Canyon	6100	28	6S	12F	S, P, I	Upper Yellowstone
Baxelder Creek	5100	24	28N	16E	P	Hills
Branham Lakes	8850	5	4S	3W		Ruby
Bridger Bowl	7250	25	1N	6F	S, P	Gallatin
Bristow Creek	3900	2	32N	10W		Kootenai
Brush Creek Timber	5000	12	10N	26W		Kootenai
Bull Mountain	6600	18	2N	9W		Big Hole
Cabin Creek	5200	34	23N	10W		Trion-Merles-Sun
Call Road	8050	21	8S	2W		Madison
Calvert Creek	6430	34	2N	14W	S, P, I	Big Hole
Carp Misery	6000	30	28N	18W		Flothead
Carp Senta	7890	2	8S	18E		Upper Yellowstone
Corras Basin	9000	18	10S	4F	S, P	Gallatin
Carter Creek	1300	22	8S	7W		Beaverhead
Cash Creek	7800	8	9S	3F	S, P, I	Gallatin
Cedar Grove	3760	35	28N	11W		Kootenai
Chessman Reservoir	6200	2	8N	5W		Missouri Main Stem
Christen Creek	4060	14	33N	23W		Flothead
Christensen Ranch	6000	34	7S	7W	P, HSC	Beaverhead
Clover Meadow	8600	28	9S	2W	S, P, I	Ruby
Cole Creek	7850	26	1S	19E	S, P, I	Upper Yellowstone
Colley Creek	6300	34	6S	10E	P	Upper Yellowstone
Coolidge	5600	1	8N	14W	S, P, I	Clarks Fork
Coolidge Station	8150	19	9S	15F		Upper Yellowstone
Copper Bottom	5200	15	15N	8W	S, P, I	Clarks Fork
Copper Camp	6950	3	15N	9W	S, P, I	Clarks Fork
Copper Creek	5100	1	15N	9W		Clarks Fork
Copper Lake Creek	6100	3	15N	9W		Clarks Fork
Copper Mountain	7700	13	3N	7W		Jefferson
Cottonwood Creek	6400	14	7N	8W		Clarks Fork
Coyote Hill	4200	12	18N	16W		Upper Yellowstone
Creville Mountain	8400	22	9S	9E		Judith
Crystal Lake	6100	19	12N	18E	S, P, I	Beaverhead
Dad Creek Lake	8400	24	12S	13W		Musselshell
Daisy Peak	7600	34	13N	11E	P	Billterfoot
Daisy Creek	5180	36	5N	18W	S, P, I	Big Hole
Darshorse Lake	8600	4	6S	16W	S, P, I	Kootenai
Davis Creek	5400	20	33N	33W		Kootenai
Deadman Creek	6450	23	12N	8E	S, P, I	Missouri Main Stem
Deer Mountain	5600	10	31N	18W		Flothead
Orville's Slide	8100	14	5S	6E		Gallatin
Oliver's Basin	7050	21	6N	13W		Clarks Fork
Oliver	7800	14	12S	4W	S, P, I	Ruby
Old Hill	6400	24	11N	8W	P	Clarks Fork
Engle Creek	7000	2	5N	10E		Musselshell
East Boulder S	9250	14	7S	12F	A	Gallatin
East Fork R. S.	5400	16	2N	17W		Billterfoot
El Dorado Mine	1800	23	8N	12W		Clarks Fork
Elk Horn Springs	7800	21	4S	12W		Beaverhead
Elk Peak	8000	10	8N	8E		Missouri Main Stem
Emery Creek	4350	20	31N	18W	S, P, I	Flothead
Folly Creek	5500	8	22N	18W		Flothead
Fish Creek	8000	5	1S	7W		Jellison
Fisher Creek	9100	21	9S	14E	S, P, I	Upper Yellowstone
Five-Bull	5700	25	20N	10W		Trion-Merles-Sun
Flothead Mountain	6300	12	35N	18W	S, P, I	Flothead
Fletcher Ridge	7500	3	14	10W		Big Hole
Foothill	8280	11	1S	13W		Big Hole
Forest Lake	6400	26	6N	10E		Musselshell
Four Mile	6900	5	4S	2W	P	Madison
Fourth of July	3450	19	34N	33W		Kootenai
Fred Burr Pass	8000	12	6N	13W		Clarks Fork
Freight Creek	6000	13	26N	10W		Trion-Merles-Sun
Friday Hill	4620	19	34N	33W		Kootenai
Frohner Meadows	6480	23	8N	5W	S, P, I	Missouri Main Stem
Garver Creek	4250	18	37N	32W	S, P, I, W	Kootenai
Gibbons Pass	7100	3	2S	19W		Billterfoot
Goal Mountain	7000	20	22N	10W		Trion-Merles-Sun

Snow Course	Elev.	Sec.	Imp.	Range	Sensors In Addition To Snow Course	Drainage Basin
Gold Creek Lake	7200	14	8N	12W		Clarks Fork
Gold Stone	8100	11	8S	16W		Beaverhead
Grasshopper	7000	39	9N	8F		Missouri Main Stem
Grave Creek	4300	1	36N	25W	S, P, I	Kootenai
Griffin Creek Divide	5150	31	28N	25W		Flothead
Grizzly Peak	8400	26	7S	19E		Upper Yellowstone
Gunsight Lake	6300	30	26N	13W		Flothead
Hand Creek	5035	6	29N	25W	S, P, I	Flothead
Heavins Lake	6450	18	37N	33W	S, P, I, W	Kootenai
Haystack	8050	16	21N	12E		Musselshell
Heart Lake Trail	4800	31	14N	27W		Clarks Fork
Hobson Dam	6550	22	11S	3F		Madison
Hill Roaring Divide	5770	35	32N	22W		Flothead
Herring Junction	4850	19	34N	23W	P	Flothead
Hillwood Divide	5650	16	19N	9E	P	Missouri Main Stem
Hillwood Station	4600	20	20N	9E	P	Missouri Main Stem
Holbrook	4530	18	21N	13W	A	Flothead
Hood Meadow	6600	22	4S	6E		Gallatin
Hoodoo Basin	6000	17	14N	27W	S, P, I	Clarks Fork
Hoodoo Creek	5900	16	14N	27W		Clarks Fork
Interberg Lake #3	5600	1	35N	17W		St. Mary
Independence	7850	21	7S	12F		Upper Yellowstone
Intergeard	6450	6	5N	13W		Clarks Fork
Jack Creek	6650	1	6S	1E		Madison
Jahnke Lake Trail	1200	24	1S	16W		Big Hole
Johnson Park	6450	16	10N	11E	P	Musselshell
Josephine Lower #9	4900	22	35N	16W		St. Mary
Kreiser Creek	3300	25	30N	35W		Kootenai
King's Hill	1500	34	13N	8E		Missouri Main Stem
Kishenehn	3890	14	31N	22W		Flothead
Klons Corp	3120	9	29N	16E	P, T, W	Hill
Kraft Creek	4750	4	19N	17W	S, P, I	Flothead
Lake Creek	6100	21	11S	1E		Madison
Lakeview Canyon	6930	26	14S	2W		Beaverhead
Lakeview Ridge	1400	27	14S	2W	S, P, I	Beaverhead
Lamb Pass	7480	9	10S	15W		Beaverhead
Lamb Ridge	8100	4	10S	15W	S, P, I	Beaverhead
Lark Creek	6860	10	4S	6E	S, P, I	Gallatin
Little Park	7400	22	6S	3F		Gallatin
Logan Creek	4300	34	10N	24W		Gallatin
Lone Mountain	8880	25	6S	2F		Billterfoot
Lost Horse	5940	5	4N	23W		Kootenai
Lost Soul	4800	31	33N	29W		Kootenai
Lower Twin	7900	12	4S	3W	S, P, I	Madison
Lower Willow Creek	4740	3	9N	14W	P, HSC	Clarks Fork
Lubrecht Flume	4680	13	13N	14W	S, P, I	Clarks Fork
Lubrecht Forest #3	5450	19	13N	14W		Clarks Fork
Lubrecht Forest #4	4650	23	13N	15W		Clarks Fork
Lubrecht Forest #6	4040	11	13N	15W		Clarks Fork
Lubrecht Hydroplos	8200	27	13N	14W		Clarks Fork
Madison Plateau	7750	28	10S	5F	S, P	Madison
Many Glaciers	4980	10	35N	17W	S, P, I	St. Mary
Marlas Pass	5250	31	30N	13W		Trion-Merles-Sun
Maynard Creek	6230	19	1N	7E	S, P	Gallatin
Middle Hill Creek	7850	13	4S	3W		East Entrance
Hill Creek	7500	31	6S	13E	P	Ruby
Mineral Creek	4000	34	35N	17W		Upper Yellowstone
Monument Peak	8800	16	7S	12E	S, P, I	Upper Yellowstone
Moulton Reservoir	6850	17	4N	7W		Clarks Fork
Mount Allen #7	5700	27	35N	16W		St. Mary
Mount Lochhart	6400	18	25N	9W	S, P, I	Trion-Merles-Sun
Mudd Lake	7650	24	2N	15W		Clarks Fork
Mule Creek	8300	9	5S	11W	S, P, I	Big Hole
Nevada Creek	6480	6	12N	7W	S, P, I	Clarks Fork
New World	6700	24	3S	6E		Gallatin
Newton Mountain	5600	73	34N	34W		Kootenai
Nez Perce Camp	5580	19	1S	23W	S, P, I	Billterfoot
Nez Perce Creek	6500	16	0N	6W		Jefferson
Nez Perce Pass	6570	25	1S	24W		Billterfoot
Northern Basin	6040	25	28N	19W	S, P, I	Flothead
North Fork Elk Creek	6250	20	11N	33W	S, P, I	Clarks Fork
North Fork Jaclo	6330	3	12N	17W		Flothead
North Meadow	7500	24	3S	3W		Madison
Northwest Entrance	7400	33	9S	14F	S, P, I	Upper Yellowstone
Norich	8500	18	11S	4W		Ruby
Ophir Pass	7150	13	11N	8W		Clarks Fork
Pallisade Creek	8250	3	2N	15W		Big Hole
Peterson Meadows	1200	2	4N	14W	S, P	Clarks Fork
Pierle Pin O	9450	36	4S	13F	A	Upper Yellowstone
Pierle Pin Lower	6200	1	5S	14E	P	Upper Yellowstone
Pierle Pin Middle	7250	1	5S	14E		Upper Yellowstone
Picket Pin Upper	8100	12	4S	14E	P	Upper Yellowstone
Pickfoot Creek	6650	31	10N	4E	S, P, I	Missouri Main Stem
Pierle Grounds	6500	21	5N	6W		Jellison
Piegan Pass #6	5500	21	35N	16W		St. Mary
Pike Creek	5930	5	19N	13W	S, P, I	Trion-Merles-Sun
Pipesone Pass	7200	10	1N	7W		Jefferson
Pirer Basin	8930	11	5S	13E	A, S, P, I	Upper Yellowstone
PMC Headquarters	3656	34	6S	23E	P, W, T, HSC	Upper Yellowstone
Poorman Creek	5100	5	27N	31W	S, P, I, W	Kootenai
Porcupine	6500	10	4N	10E	S, P, I	Upper Yellowstone
Potomacagon Park	1150	33	10S	3E		Madison
Potomacagon #8	5800	36	16N	17W		St. Mary
Red Mountain	6000	4	36N	29W		Kootenai
Red Top	5260	14	34N	34W		Kootenai
Poc Creek	5600	1	12N	18E	P	Judith
Poc Creek Meadows	8160	34	1S	5E	P	Gallatin
Rocky Peak	8000	17	7N	5W	S, P, I	Jellison
Rorly Boy	4700	22	28N	16E	S, P	Hill
Serajoura	6550	36	21N	6E		Upper Yellowstone

Snow Course	Elev	Sec.	Imp.	Range	Sensors In Addition To Snow Course <sup>5</sup>	Drainage Basin
*Saddle Mountain	7940	5	2S	39W	S, P, I	Billterfoot
Sandstone Creek	8300	17	10S	3F		Madison
*Snowy Falls	8100	14	5S	6E	S, P, I	Gallatin
*Silver Run	6630	18	8S	19E	S, P, I	Upper Yellowstone
*Solomon Summit	7260	30	8N	17W	S, P, I	Clarks Fork
*Stylor Trail	6200	29	19N	17W	S, P, I	Flothead
Stag-A-Mile Lake	8750	29	5S	17W		Big Hole
Silida Rock Mountain	7100	35	10N	16W		Clark Fork
Smugglers Mine	6960	24	4S	4W		Ruby
*Sawsh Fork Meadows	8100	13	0N	10F	S, P, I	Upper Yellowstone
Spotted Bear Mountain	7000	23	25N	35W	A	Flothead
*Star Pass	8100	20	12N	9E	S, P, I	Judith
*Steel Pass	6030	5	36N	25W	S, P, I	Koolenol
Star Lake F	9550	31	8S	15E	A	Upper Yellowstone
Sleeping Pass	6600	16	13N	7W		Missouri Main Stem
Storm Lake	7780	19	4N	13W		Clark Fork
Stryker Basin	6180	26	24N	24W	P	Flothead
Suerli Hill	6500	19	5N	13W		Clarks Fork
Stuarts Mountain	7400	6	14N	18W		Clark Fork
Sucker Creek	3960	11	29N	16F	P	Mills
Sugarcreek	7350	13	7N	6W		Clarks Fork
Taylor Pass	8500	26	9S	2F	S, P	Gallatin
Taylor Road	4080	19	29N	16E	P	Mills
Ten Mile Lower	6600	12	8N	6W		Missouri Main Stem
Ten Mile Middle	6800	13	6N	6W		Missouri Main Stem
Ten Mile Upper	8000	19	8N	5W		Missouri Main Stem
*Tepic Creek	8000	15	12S	3W	S, P, I	Madison
Tiebarline Creek	8850	10	8S	18E		Upper Yellowstone
Trail Creek	7090	15	10S	15W		Brookhead
Trinity Lake	6100	9	25N	17W		Flothead
Truman Creek	4060	10	26N	22W		Flothead
TV Mountain	6600	33	15N	19W		Clark Fork
*Twelveville Creek	5600	34	5N	23W	S, P, I	Billterfoot
Twenty-One Mile	7150	1	11S	5E		Gallatin
Twin Creeks	3580	25	25N	16W	A	Flothead
*Twin Lakes	6510	32	5N	23W	S, P, I	Billterfoot
Upper Holland Lake	6200	28	20N	15W		Flothead
*Waldran	5600	11	25N	9W	S, P, I	Trilon-Merles-Sun
*Warm Springs	7800	13	6N	13W	S, P, I	Clark Fork
Weasel Divide	5450	20	37N	24W		Koolenol
West Rosebud	7500	9	7S	16F		Upper Yellowstone
Wess Yellowstone	6700	34	13S	5E	S	Madison
*Whistery Creek	6800	19	14S	5E	S, P, I	Madison
*White Hill	8100	18	9S	15E	S, P, I	Upper Yellowstone
White Pine Ridge	8850	18	14S	9W		Brookhead
Willow Creek	6590	31	7S	20F		Upper Yellowstone
*Wood Creek	5960	36	20N	10W	S, P, I	Trilon-Merles-Sun
Wrong Creek	5700	32	25N	10W		Teson-Merles-Sun
Wrong Ridge	6800	37	25N	10W		Trilon-Merles-Sun
WYOMING						
*Bald Mountain	9380	29	56N	91W	S, P, I	Big Horn
*Beersaath Lake	9275	--	--	--	S, P, I	Upper Yellowstone
*Burgess R.S. No. 2	7880	36	56N	--	S, P, I	Longue
*Canyon	7940	--	--	--	S, P, I	Upper Yellowstone
East Entrance	6960	17	52N	30SW		Big Horn
*Evening Star	9200	20	54N	107W	S, P, I	Upper Yellowstone
Five Springs Falls	7620	20	56N	92W		Big Horn
Isis Camp	1780	--	--	--		Upper Yellowstone
Lupine Creek	7360	--	--	--		Upper Yellowstone
Horris Basin	7500	--	--	--		Madison
Old Fall Line	1400	27	52N	116W		Madison
*Porter's Pral	9400	19	55N	108W	S, P, I	Upper Yellowstone
Steenshot Point	7560	29	56N	87W		Longue
*Sylvan Lake	8420	--	--	--	S, P, I	Upper Yellowstone
Sylvan Pass	1100	--	--	--		Upper Yellowstone
Thudon Divide	1980	--	--	--		Upper Yellowstone
*Two Ocean Plateau	9160	6	48N	111W	S, P, I	Snake
Wolverine	7650	29	55N	106W		Upper Yellowstone
IDAHO						
*Above Bursa	4100	11	48N	5E	S, P, I	Spokane
Brar Mountain	5400	9	57N	3E	S, P, I	Pend O'Pellie
Big Springs	6400	4	13N	44E		Snake
Blue Ridge Mine	6700	27	13N	38E		Snake
Camp Creek	6800	21	13N	36E		Snake
*Crab Creek	6200	6	12N	39E	S, P, I	Snake
Helverson Creek	4850	3	57N	3E		Koolenol
Island Park	6290	28	18N	43E		Snake
Kilgore	6200	6	12N	39E		Snake
Kitt Carson	5020	4	21N	15E		Clearwater
Lois Pass	5240	16	38N	15E		Clearwater
*Lookout	5120	4	41N	6E	S, P, I	Spokane
Moose Creek	6200	14	27N	21E		Salmon
Savage Pass	6110	18	36N	15E		Clearwater
Sawhill Mountain	8720	7	14N	43E		Snake
*Sunset	5600	33	49N	5E	A, S, P, I	Spokane
Targhee Pass	7000	32	16N	44E		Snake
Vellry View	6740	1	15N	44E		Snake
White Elephant	1700	17	14N	43F		Snake

LEGEND

\* SNOWTEL site - data transmitted daily by telemetry

† Blank refers to snow course only at site

S = Snow pillow also

P = Precipitation gage also

T = Maximum temperature also

W = Wind run also

A = Aerial marker also

NSC = No snow course